IN THE CLAIMS

Cancel claims 13-50.

Add new claims 51-64 as follows.

1-50. (canceled)

51. (new) An optically detectable security feature comprising:
at least one rare earth dopant having an intrinsic set of energy levels;

a glass or plastic particle incorporating the at least one rare earth dopant, where interaction between the particle and the at least one rare earth dopant is such that the intrinsic set of energy levels is modified to provide a new electronic energy level profile that allows transitions different to those allowed by either the rare earth dopant by itself or the undoped glass or plastic particle; and

a security profile associated with the new electronic energy level profile, where the security profile comprises (i) a ratio of emission intensities at a plurality of pre-determined wavelengths, and (ii) different emission lifetimes at the plurality of pre-determined wavelengths.

52. (new) The optically detectable security feature of claim 51 wherein the glass or plastic particle is a borosilicate glass particle.

53. (new) The optically detectable security feature of claim 51 wherein the glass or plastic particle is a microbead.

54. (new) The optically detectable security feature of claim 51, wherein the security profile is responsive to excitation at a pre-determined wavelength between 395nm and 535nm.

55. (new) A security media comprising:

a media;

an optically detectable security feature incorporated within the media, the feature comprising:

at least one rare earth dopant having an intrinsic set of energy levels;

a glass or plastic particle incorporating the at least one rare earth dopant, where interaction between the particle and the at least one rare earth dopant is such that the intrinsic set of energy levels is modified to provide a new electronic energy level profile that allows transitions different to those allowed by either the rare earth dopant by itself or the undoped glass or plastic particle; and

a security profile associated with the new electronic energy level profile, where the security profile comprises (i) a ratio of emission intensities at a plurality of pre-determined wavelengths, and (ii) different emission lifetimes at the plurality of pre-determined wavelengths.

56. (new) The security media of claim 55 wherein the media comprises a fluid.

57. (new) The security media of claim 55 wherein the media comprises a document.

58. (new) A method of preparing an optically detectable security feature of increased difficulty for unauthorized reproduction for purposes of counterfeiting, the method comprising:

selecting a glass or plastic carrier and a plurality of rare earth dopants such that when the rare earth dopants are incorporated into the glass or plastic particle, interaction between the particle and the at least one rare earth dopant is such that a security profile is provided based on a plurality of pre-determined emission wavelengths that differ from emission wavelengths of either the rare earth dopants or the glass or plastic particle;

incorporating the plurality of rare earth dopants into the glass or plastic carrier;

creating particles of glass or plastic incorporating the plurality of rare earth

dopants, such that each particle exhibits a security profile comprising (i) a ratio of emission intensities at a plurality of pre-determined wavelengths, and (ii) different emission lifetimes at the plurality of pre-determined wavelengths.

59. (new) A method of validating an item having an optically detectable security feature comprising at least one rare earth dopant having an intrinsic set of energy levels, where each of the at least one rare earth dopant is incorporated in a glass or plastic particle and interaction between the particle and the at least one rare earth dopant is such that the intrinsic set of energy levels is modified to provide a new electronic energy level profile that allows transitions different to those allowed by either the rare earth dopant by itself or the undoped glass or plastic particle, the method comprising:

illuminating the security feature at an excitation wavelength to produce emissions from the at least one rare earth dopant;

detecting emissions from the security feature at a plurality of pre-determined wavelengths allowed by the new electronic energy level profile;

ascertaining a ratio of intensities of emissions at the plurality of pre-determined wavelengths and emission lifetimes at each of the plurality of pre-determined wavelengths;

comparing the ascertained ratio of intensities of emissions and emission lifetimes at the plurality of pre-determined wavelengths with a security profile comprising (i) relative emission intensities at the plurality of pre-determined wavelengths, and (ii) emission lifetimes at each of the plurality of pre-determined wavelengths; and

indicating a successful validation in the event of a match.

60. (new) A method of creating an optically detectable security feature, the method comprising:

providing network modifier oxides for use in creating a block of glass doped with a rare earth ion;

selecting weight percentages of the network modifier oxides to create desired energy levels in the block, where the desired energy levels are different to an

intrinsic set of energy levels associated with the rare earth ion by itself or the undoped glass, and where altering the weight percentages alters the energy levels in the block;

creating the block; and

pulverizing the block to create individual optically detectable security features.

61. (new) The method of claim 60, wherein providing network modifier oxides for use in creating a block of glass doped with a rare earth ion includes providing at least two rare earth ions.

62. (new) The method of claim 60, further comprising varying the ratios, by mole percentage, of the at least two rare earth ions, thereby varying intensities of emissions at different pre-selected wavelengths.

63. (new) A method of creating an optically detectable security feature, the method comprising:

providing network modifier oxides for use in creating a block of glass doped with a rare earth ion;

selecting weight percentages of the network modifier oxides to create desired energy levels in the block, where the desired energy levels include a transition forbidden when the rare earth ion is in solution;

creating the block; and

pulverizing the block to create individual optically detectable security features.

64. (new) An optically detectable security feature comprising:

at least one rare earth dopant having an intrinsic set of energy levels;

a glass or plastic particle, other than an optically stimulable glass, incorporating the at least one rare earth dopant, where interaction between the particle and the at least one rare earth dopant is such that the intrinsic set of energy levels is modified to provide a new electronic energy level profile that allows transitions different

to those allowed by either the rare earth dopant by itself or the undoped glass or plastic particle; and

a security profile associated with the new electronic energy level profile, where the security profile comprises (i) a ratio of emission intensities at a plurality of pre-determined wavelengths, and (ii) different emission lifetimes at the plurality of pre-determined wavelengths, where the emission intensities and the emission lifetimes are measured in the absence of excitation.